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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HARAN, JOHN T

ART UNIT PAPER NUMBER

1733

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,414

Applicant(s)

SARMIENTO, PEDRO

Examiner

John T. Haran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-7 and 9-14 in the response filed on 12/04/03 is acknowledged.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/15/02 is being considered by the examiner.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: The drawings are replete with reference numbers that are not mentioned in the specification. For example 103, 120, 121, 122, and 123 in Figure 1a; 203, 217, 221, 225, 226, 231, and 232 in Figure 2a; and 353 in Figure 3. It is noted that this list is not exhaustive and Applicant should double check to ascertain whether additional reference numbers are not mentioned in the description.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are **required** in reply to the Office action **to avoid abandonment of the application**. The objection to the drawings will not be held in abeyance. It is suggested to amend the specification accordingly to add the reference numbers in the specification because it appears some of them are referred to in the claims.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 10 claims features not described in the specification such as the structural supports, the base, and the non-coherent photon source being held in place by the structural support so that it is connected to the base. The specification should be amended to describe these features and should be referred to by the corresponding reference numbers from the drawings.

Claim Objections

5. Claim 12 is objected to because of the following informalities: it appears the word "further5" should read - - further - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-7 and 9-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the preamble indicates it is an apparatus but the body claims a work piece (the material worked upon) as part of the apparatus. The

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material worked upon is generally not considered part of an apparatus. It appears Applicant should claim a system, since system claims encompass both the apparatus and the material worked upon by the apparatus.

Claim 1 is also indefinite because it is unclear how the light pipe is coupled to the photon source or what is meant by the term coupled. Is the light pipe physically attached (coupled) to the photon source? If so this appears to be inconsistent with the figures, which illustrate the photon source being spaced and unconnected to the light pipe. The specification states that the photon source is optically coupled to the light pipe (page 4, lines 28-30). Is this different than being physically attached? If so then it appears the claim should be amended to say - - optically coupled - -. It is noted the same problem exists in claim 4.

Claim 1 is additionally indefinite because it is unclear what is required of the mask and this problem is exacerbated by not stating all the limitations of the mask in the same place. It appears from the specification that the mask consists of a reflective coating placed on the end of the light pipe not coupled to the photon source in a pattern that defines a weld location so that when the light pipe contacts the work piece only the surface of the end of the light pipe free of the mask is in contact with the work piece. It is suggested to amend the light pipe and mask limitations as follows:

- - a light pipe optically coupled to the photon source at one end;

- a mask consisting of a reflective coating on the other end of the light pipe in a pattern that defines a weld location so that when the light pipe contacts the work

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piece only surfaces of the other end of the light pipe that do not contact the work piece are coated with the mask - -.

Claim 9 is indefinite because the preamble indicates it is a method, but the body of the claim is directed to an apparatus not a method. It is unclear if the claim is meant to be a method or an apparatus. It is noted that if it is meant to be an apparatus claim then it is a duplicate of claim 1. If it is meant to be a method claim then it needs to be amended to have method steps, however it is noted that doing so may result in the new method claim being restricted under the principle of election by original representation.

Claim 10 is also indefinite. First, it is suggested that the claim be rewritten in a format like claim 1 wherein each element of the apparatus is clearly delineated. It is unclear what is meant by the structural supports and the base. Also is the structural support in line 3 the same or different as the one in claim 4? Neither the specification nor the figures indicate that the photon source is held in place by a structural support. It appears Applicant is saying that the light pipe (105) is held in place by element 122 and is connected to a base (121?) by element 124. It is suggested to amend the claim to state such. As noted previously the specification should be amended to describe these elements (121, 122).

Claim 10 is also replete with lack of antecedent basis problems such as "the mask end", "the light pipe", "the open areas of the mask", and "the movable plate". It appears that the mask and the light pipe need to be better defined as in claim 1.

Claim 10 is also indefinite because it is unclear if "the light source" referred to in line 9 of the claim is the photon source and it is unclear what can act as the means

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mentioned in line 9 of the claim for making the light source uniformly dispersed. Is it the mask, the reflector, or something else?

Claim 13 is indefinite because of the use of the word "except". The specification teaches two species: a first embodied in Figures 1a and 1b wherein the light pipe is fixed and the nest is attached to a movable plate and a second embodied in Figures 2a and 2b wherein the nest is fixed and the light pipe is attached to a movable plate. There does not appear to be a teaching wherein both the light pipe and the nest are attached to movable plates. Is "except" used instead of "further" to indicate that in addition to all the elements of claim 10 the apparatus also comprises a movable means connected to light pipe or is "except" used in the alternative to mean that the light pipe is moved rather than the nest? If "except" is used instead of "further" there does not appear to be support in the specification for this. If "except" is used in the alternative then a new independent claim needs to be written. Clarification and an appropriate amendment are requested.

Allowable Subject Matter

8. Claims 1-7 and 10-14 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to suggest a photon welding apparatus or system comprising, in combination with the other claimed limitations, a light pipe with a mask that consists of a reflective coating coated on one end wherein the pattern of the mask

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defines a weld location so that when the light pipe contacts the work piece only surfaces of the end of the light pipe that do not contact the work piece are coated with the mask.

Grimm (U.S. Patent 5,840,147) teaches a photon welding apparatus wherein a non-coherent photon source directs photon energy with the aid of a reflector through a transparent plastic to an absorbing plastic so that the absorbing plastic heats up and conducts heat to the adjacent transparent plastic and the bottom absorbing plastic is held in a groove (nest) in a movable plate that is moved upward to apply pressure to the bond line of the plastics so that the heated plastic parts fuse together to form a weld (See Figure 2; Column 8, lines 1-27). There is no suggestion of having a light pipe for directing the light from the photon source to the plastic parts.

As noted in Savitski et al (U.S. Patent 6,596,122) when welding plastic parts together it is known that the well known and conventional means for directing light to the weld area, such as reflectors and light pipes, are alternate expedients and interchangeable (Column 6, lines 35-58). Sudduth et al (U.S. Patent 5,426,308) and Nath (U.S. Patent 4,233,493) are examples of apparatuses with a light source and a reflector that are optically coupled to a light pipe (See Figures 8b, 12, and 13 of Sudduth and Figure 2 of Nath). Nath teaches coating the exit of the light pipe with a transmissive coating (Column 3, lines 24-36), however there is no suggestion in the art of having a mask coated on one end of the light pipe in a pattern that defines a weld location.

Davenport et al (U.S. Patent 5,278,731) teaches placing a mask member at the output end of a light guide for selectively blocking a portion of the light output (Column 3, lines 60-63), however there is no suggestion for having the end of a light pipe coated

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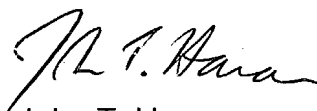
with a mask in a pattern that defines a weld location so that when the light pipe contacts the work piece only surfaces of the end of the light pipe that do not contact the work piece are coated with the mask.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(571) 272-1217**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



John T. Haran
Examiner
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